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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/912,616	07/24/2001	Vladimir Segal	30-5004 DIV3	6002
21567	7590	11/17/2004	EXAMINER	
WELLS ST. JOHN P.S. 601 W. FIRST AVENUE, SUITE 1300 SPOKANE, WA 99201			MORILLO, JANELLE COMBS	
			ART UNIT	PAPER NUMBER
			1742	

DATE MAILED: 11/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/912,616

Applicant(s)

SEGAL ET AL.

Examiner

Janelle Combs-Morillo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 37,38,44,45,47-51 and 53-58 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 37,38,44,45,47-51 and 53-58 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7/2/04, 8/30/04
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 21, 2004 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 37, 38, 44, 45, 47-51, 53-58 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The original specification does not mention the particular limitation of “non-iron majority metal”, and therefore said phrase is considered new matter. The instant specification does provide support for a preferred composition embodiment, wherein the target comprises “at least one of Al, Ti, Cu, Ta, Ni, Mo, Au, Ag, Pt and alloys thereof” (specification page 2 lines 6-7).

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However, the specification does not specify (explicitly or implicitly) that said target is a “non-iron majority metal”.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 38, 48-51, 53-55, and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dunlop (US 5,780,755).

Dunlop teaches an aluminum alloy with a grain size of $< 20\mu\text{m}$ (column 4 line 19), in particular $< 2\mu\text{m}$ (column 10 lines 12-13), wherein the precipitate regions present are $< 1\mu\text{m}$ (column 4 lines 22-23). Dunlop teaches that randomly oriented grains (column 8 line 59) or other desired textures (including $< 111 \rangle$, see Fig. 11) can be controlled by ECAE (column 8 lines 25-39). Dunlop teaches that said microstructure is uniform throughout (column 8 lines 5-6).

Concerning independent claim 38, because Dunlop teaches that said microstructure is uniform throughout (column 8 lines 5-6), then it is held that Dunlop teaches that the second-phase precipitates are likewise uniformly distributed. The degree of $< 111 \rangle$ texture taught by Dunlop in Fig. 11 (which was the result of ECAE, see column 8 lines 60-67) qualifies as “strong texture”, substantially as presently claimed.

Because Dunlop teaches a product by process substantially as claimed in independent claim 38, including working by ECAE in multiple passes (column 8 lines 1-4) such that a desired

texture (including {111}, as claimed in instant claim 38) can be formed by varying parameters of ECAE (column 8 lines 25-59), and because Dunlop teaches when said process is performed on an aluminum alloy a grain size is achieved that overlaps the presently claimed grain size range, it is held that Dunlop has created a prima facie case of obviousness of the presently claimed invention.

Concerning claims 48-50, Dunlop teaches that precipitate regions present $<1\ \mu\text{m}$ (column 4 lines 22-23), which overlaps the presently claimed range.

Concerning claim 51, as stated above, Dunlop teaches two ECAE passes at column 8 line 1.

Concerning claims 53-55, Dunlop does not teach the orientation distribution function (ODF) of the instant aluminum alloy. However, the examiner asserts that where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims (such as ODF) are necessarily present. See MPEP 2112.01.

Concerning claim 58, as stated above, Dunlop teaches an aluminum alloy composition, which meets the presently claimed composition limitation.

6. Claims 37, 44, 45, 47, 56, and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dunlop (US 5,780,755) in view of "Aluminum and Aluminum Alloys" pp 290-292.

As stated above, Dunlop teaches an aluminum alloy with a grain size $<2\ \mu\text{m}$ (column 10 lines 12-13), wherein the precipitate regions present are $<1\ \mu\text{m}$ (column 4 lines 22-23). Dunlop teaches that randomly oriented grains (column 8 line 59) or other desired textures (including $<111>$, see Fig. 11) can be controlled by ECAE (column 8 lines 25-39). Dunlop teaches that said microstructure is uniform throughout (column 8 lines 5-6).

Concerning independent claim 37, Dunlop does not mention "the resulting alloy being precipitate free". However, it is well known to perform a step of solution heat treating to obtain a homogeneous solid solution, followed by quenching in order to maintain the super saturated solution (see "Aluminum and Aluminum Alloys" p 290-292). It would have been obvious to one of ordinary skill in the art to achieve a precipitate free solid solution for the fine grained sputtering target of Dunlop because the presence or absence of precipitates is known to be dependent on solution heat treating, and because "Aluminum and Aluminum Alloys" teaches a more homogeneous structure can be produced (p 292, 3rd column, 1st full paragraph).

Instant claim 37 is a product by process claim. With regard to the process steps of solutionizing and quenching prior to equal channel angular extruding, it is well settled that a product-by-process claim defines a product, and that when the prior art discloses a product substantially the same as that being claimed, differing only in the manner by which it is made, the burden falls to applicant to show that any process steps associated therewith result in a product materially different from that disclosed in the prior art. See MPEP 2113, *In re Brown*

(173 USPQ 685) and *In re Fessman* (180 USPQ 524) *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Concerning claims 44 and 57, as stated above, Dunlop teaches an aluminum alloy composition, which meets the presently claimed composition limitation.

Concerning claim 45, Dunlop does not teach the orientation distribution function (ODF) of the instant aluminum alloy. However, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims (such as ODF) are necessarily present. See MPEP 2112.01.

Concerning claim 47, as stated above, Dunlop teaches that said microstructure is uniform throughout (column 8 lines 5-6).

Concerning claim 56, as stated above, Dunlop teaches two ECAE passes at column 8 line 1. See also above discussion of product by process limitations. Applicant has not shown that the presently claimed “from 4 to 6 passes” (claim 56) results in a product materially different than the prior art product.

Response to Arguments/Amendments

7. In the response filed on July 21, 2004, applicant amended claims 37 and 38. Claims 37, 38, 44, 45, 47-51, 53-58 are still pending.

Applicant’s argument that the original disclosure supports “non-iron majority metal” limitation has not been found persuasive. Just because the disclosure gives an example of an aluminum alloy does not mean the disclosure is drawn to non-iron majority alloys (nor does this mean the disclosure is drawn to non-Pb, non-Co, non-Y based alloys, etc.). Excluding Fe from

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the alloys that the instant broad invention is drawn to is clearly new matter, and is not apparent from the original disclosure.

Applicant's argument that the present invention is allowable over the prior art of record because Dunlop does not teach precipitate free alloys in combination with a fine grain size of ≤ 1 micron has not been found persuasive. Dunlop teaches that a workpiece can be processed by ECAE and subsequently heat treated (column 8 lines 16-24), and wherein a final grain size is approximately 1 micron. Therefore, the argument that heat treating after ECAE produces large grains has not been found persuasive. It would have been obvious in view of the disclosures of Dunlop combined with "Aluminum and Aluminum Alloys" to achieve an aluminum alloy with randomized, uniform grains, complete a precipitate free microstructure and a grain size ≤ 1 micron in size (see also rejection above).


Applicant's argument that the present invention is allowable over the prior art of record because Dunlop does not disclose an alloy product produced by the presently claimed process has not been found persuasive. See above discussion of product by process claims above..


Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janelle Combs-Morillo whose telephone number is (571) 272-1240. The examiner can normally be reached on 8:30 am- 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


GEORGE WYSZCZANSKI
PRIMARY EXAMINER


JCM
November 12, 2004